

REMARKS

Reconsideration and withdrawal of the rejections set forth in the above-mentioned Office Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 4-7 and 15-18 remain pending in this application. Claims 4, 7, 15 and 18 are independent and have been amended herein.

Claims 7 and 18 were rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 6,575,549 (Silverbrook) or by U.S. Patent No. 6,481,816 (Oyen). This rejection is respectfully traversed.

In the printing method of Silverbrook, device failure can be compensated by shifting ink dots sideways or lengthways to adjacent rows or columns. Applicants submit, however, that Silverbrook does not disclose or suggest at least increasing a driving frequency for ejecting ink from neighboring nozzles by 2 times, with the driving frequency being a frequency for driving the printing head to eject ink in performing the printing and being defined by a number of times the plurality of nozzles in the printing head are drivable during a predetermined period, as is recited in independent Claims 7 and 18. Referring to Figures 2 and 3, each of nozzles A-N are drivable 8 times, once for each of rows 1-8. Thus, driving frequency does not change from Figure 2 to Figure 3. While some nozzles (such as I in Figure 2 and G and I in Figure 3) may be used more often than others in a predetermined period, each are drivable the same number of times for that period. That is, while each of the nozzles may not be driven the same number of

times, they are drivable the same number of times. Silverbrook, therefore, does not increase the driving frequency.

In the printing method of Oyen, in the event of a breakdown of an image forming element, the information of that pixel is transferred to an addressable position in the vicinity of an associated pixel. Referring to Figures 5B and 5C, the ink ducts h-j are each drivable 11 times for the shown period. While some ink ducts may be driven more often than others, they are drivable the same number of times during a predetermined period. Accordingly, Oyen also fails to disclose or suggest at least a driving frequency for ejecting ink from neighboring nozzles being increased by 2 times, with the driving frequency being a frequency for driving the printing head to eject ink in performing the printing and being defined by a number of times the plurality of nozzles in the printing head are drivable during a predetermined period, as is recited independent Claims 7 and 18.

Thus, Silverbrook and Oyen fail to disclose or suggest important features of the present invention recited in independent Claims 7 and 18. Reconsideration and withdrawal of the § 102 rejection are respectfully requested.

Claims 4-6 and 15-17 were rejected under 35 U.S.C. § 103 as being unpatentable over Oyen in view of U.S. Patent No. 6,278,469 (Bland et al.). This rejection is also respectfully traversed.

In Oyen, in the embodiments of Figure 5C and 5D, printing data can be shifted from a malfunctioning ink duct I to neighboring ink duct h and/or j. However, Oyen does not disclose

or suggest at least that when one neighboring nozzle has a better landing state than another neighboring nozzle, the ratio of the printing data corresponding to an abnormal nozzle to be added to the printing data corresponding to the one neighboring nozzle is higher than that of the other neighboring nozzle, as is recited in independent Claims 4 and 15.

Thus, Oyen fails to disclose or suggest important features of the present invention recited in independent Claims 4 and 15.

Bland et al. is directed to an ink jet printer and printing method that utilizes a print mask based on a detection as to whether nozzles are of a higher print quality or a lower print quality. The mask pattern of the print mask can enable deposition of more ink from the higher quality nozzles and less from the lower quality nozzles. Applicants submit that in Bland et al., nozzles to which printing data is distributed with an adjusted distributing ratio are nozzles of both lower and higher print quality for printing the same row in different passes. This is contrary to Oyen and the present invention in which neighboring nozzles print different rows in the same pass. Moreover, in Bland et al. the nozzles corresponding to the original printing data to be distributed and the nozzles to which original printing data is to be distributed with an adjusted distribution ratio are the same. This is in contrast to Oyen and the present invention in which printing data from a malfunctioning nozzle is added to printing data for a neighboring nozzle. That is, the nozzles corresponding to the original printing data and the nozzles to which such printing data are to be distributed with an adjusted distribution ratio are different. Accordingly, even if the teachings of Bland et al. were utilized in the method of Oyen, such a combination would not

result in distribution of printing data corresponding to an abnormal nozzle to neighboring nozzles with an adjustment of a distributing ratio based on the landing state of ink. Bland et al. is not believed to remedy the deficiencies of Oyen noted above with respect to independent Claims 4 and 15.

Thus, Claims 4 and 15 are also patentable over the citations of record. Reconsideration and withdrawal of the § 103 rejection are respectfully requested.

For the foregoing reasons, Applicants respectfully submit that the present invention is patentably defined by independent Claims 4, 7, 15, and 18. Dependent Claims 5, 6, 16, and 17 are also allowable, in their own right, for defining features of the present invention in addition to those recited in their respective independent claims. Individual consideration of the dependent claims is requested.

Applicants submit that the present application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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